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**An Exploratory Study into the Relationship Between Moral
Judgement and Academic Ability by School, Gender, and
Socio-Economic Status.**

By

Kathleen Marian Bancroft

A thesis submitted in partial fulfilment of the requirements for the award of

Honours in Education

at the Faculty of Community Services, Education and Social Sciences

School of Education

Edith Cowan University

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ABSTRACT

Society appears to be exhibiting an innate belief that the private school system provides a better education, a moral education and the opportunity to secure a place in the workforce more so than its counterpart, the public school system (Australian Council of Educational Research, 1980). A 1.5% shift of Australian school students from the public school system to the private school system each year has been reported (Kemp, 1997). Previous research indicates that parents are choosing the private system as they perceive an educational advantage over public schools (Australian Council of Educational Research, 1980).

The purpose of this study is to explore possible relationships between two dependant variables: academic ability; and moral reasoning, in year five students. The study was conducted in the Perth metropolitan area with the sample being purposefully selected by the independent variables of the study; namely, the school system, gender of the subjects, and socio-economic status (SES) of the school neighbourhood. The SES was defined according to the latest available census data (Australian Bureau of Statistics, 1998).

Dependant variable data was collected using two tests, the Moral Judgement Test (MJT) and the NFER-NELSON Non-Verbal Reasoning 8 & 9 instrument. Two schools from a high SES neighbourhood, one private, one public and two schools from a low SES neighbourhood, one private, one public, were selected. A total of 80 students completed the sample with 59% being boys and 41% girls.

The study was constructed as a 3 x 2 x 2 factorial design with descriptive and inferential statistics being used to identify significant differences among variables.

Analysis of the data was conducted using a MANOVA, utilising the SPSS 10 (Coakes & Steed, 2001) package. The alpha level for all tests was .05.

The results reported one significant difference between SES and Academic Ability.

There were no significant differences among the other variables. The Academic Ability and SES results corroborated previous research. The findings for the remaining variables did not find support in previous research. Implications and recommendations for further studies are considered.

DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

- i. incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education;
- ii. contain any material previously published or written by a person except where due reference is made in the text; or
- iii. contain any defamatory material.

Signature: 

Date: 17th December 2001

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CHAPTER 1

INTRODUCTION

Background to the Study

Current research indicates that public schools are losing students (Marginson, 1997b), are not teaching moral education (Bell, 1996) and are reeling from a high transfer of academic students to private schooling (Australian Bureau of Statistics, 1998; Kemp, 1997). In contrast, the private system is enjoying an influx in enrolments (Williams and Carpenter, 1990) and research reports that parents are opting for these schools to obtain what they perceive to be a *better* education, which includes a moral education for their children (Anderson, 1993).

One goal of education is to provide students with culturally and socially relevant experiences (Goodman, 1998), enabling them to apply their knowledge to make sense of the world and recognise themselves as “part of a larger whole” (Curriculum Framework, 1998, p.17). Bigger & Brown (1999) agree that the acquisition of knowledge is an important aspect of education, but they also assert that students *also* [italics added] require a moral education which gives them “skills to understand issues” (p.14) and “breadth of vision to ask *why* as well as *what*” (p.14). Similarly, Dewey (1933) stated that both intellectual and moral development, are important aims of education.

The cognitive and moral aspects of education are invariably related, as the student’s cognitive ability will influence their moral judgements and effect moral stage acquisition (Kohlberg, 1984; Lind, 1997a). To make moral judgements in life, Kohlberg (1984) stated, “you have to be cognitively mature to [be able to] reason morally” (p.139). Bell (1996) viewed moral education as a structure which enhanced

academic ability, by providing a moral framework on which students could build their information and make sense of the world, creating a cyclic function whereby moral judgements are enhanced by academic ability and academic ability by moral judgements.

Moral judgements are considered by Norman, Richards & Bear (1998) to be based upon moral knowledge which they maintained was gained in school. Bell (1996) quoting Pope John II claimed that such an education is found in Catholic schools:

The Catholic school is a witness to the truth that genuine education seeks to do more than simply impart knowledge, or train people to perform an economically productive task. All education worthy of the name seeks to bring forth as it were a full person. (p. 21).

Conversely, the curriculum in public schools is restricted by the diverse cultures and religious and moral convictions of their populations. These schools face the task of trying to teach the curriculum whilst “respect[ing] the pluralism of religious and cultural positions in the community” (Anderson, 1993, p.188). Knowledge is less likely to be internalised however, if it is not underpinned by mature opinions which allow students to interpret information and make connections to their life (Bell, 1996).

The Socio-economic status (SES) of students seems to have a definite affect on honesty and therefore moral judgements (Hartshorne & May, 1928) and several studies suggest that correlations exist between academic ability and SES. According to studies in the United States (Arroyo, Rhoad & Drew, 1999) and Australia (Batten

& Russell, 1995), there appears to be a relationship between SES and academic ability, thus the potential for achievement at school is reduced. Further to this, SES seems to be a factor in determining parents' choice of public or private education for their children (Williams & Carpenter, 1990).

Finally, gender is considered in the current study because, as Gilligan's (1977, 1982) research reported, men's and women's moral reasoning is structurally and operationally different. This purported difference between male and female moral reasoning may impact on academic performance and so needs to be considered as a variable in this study.

Three hypotheses are proposed in this study:

1. there is no difference in moral judgements of year five children divided by school, gender and SES;
2. there is no difference in academic ability of year five children divided by school, gender and SES; and
3. there is no relationship between moral judgements and academic ability and the factors, school, gender and SES.

To test these hypotheses, two test instruments were used, the Moral Judgement Test (MJT, Lind, 2000); and the NFER-NELSON Non-Verbal Reasoning 8 & 9 test (Smith & Hagues, 1993). Data was collected to determine each student's academic ability and moral judgement competency scores. Consideration was given to the independent variables of school system, SES and gender. Tests were chosen for their ability to quickly and easily elicit responses; simplicity of design; and data compilation.

Purpose and Significance of the Study

The purpose of this study is to determine if a relationship exists between the dependant variables of academic ability and moral judgements of students, and if these are affected by the independent variables of school system the students attend, their gender and their socio-economic status.

The significance of this research is the potential to provide valuable information to educators, parents and the community:

1. To establish if relationships exist between the variables;
2. To provide data for basis of future research;
3. To provide a basis for curriculum development; and
4. To provide a basis for possible educational reform.

Definition of Terms

For the purpose of this study, the following stipulative definitions will apply.

Socio-economic status (SES) –is a combination of several indicators such as education, income, age, employment and gender. This study will consider SES in terms of high and low geographical zones (as indicated by The Australian Bureau of Statistics, 1998). These zones are determined using income as the primary indicator.

Moral Judgements – are those decisions and consecutive behaviours made by an individual in given circumstances. These behaviours compromise both the affective and cognitive aspects of an individual, both of which can be measured for assessment using the Moral Judgement Test.

Academic Ability –the reasoning processes used by students to “understand and assimilate new information and ideas” (Smith & Hagues, 1993, p.1).

Public School – the schools referred to as public in this study are Western Australian government schools.

Private school – in contrast to public schools, private schools as understood in this study are Catholic schools which attract fees.

CHAPTER 2

LITERATURE REVIEW

This chapter focuses on five areas, each section refers to one of the variables under study. Firstly, a conceptual framework is derived from the literature reviewed. Secondly, literature pertaining to theories and studies of moral judgements and academic ability are reviewed. The third section considers the nature of public and private schooling, and the fourth section is concerned with socio-economic status. The final section considers the impact of gender on moral reasoning and academic achievement.

Conceptual Framework

A literature search (Anderson, 1993; Bigger & Brown, 1999; Desimone, 1999; Flynn, 1993; Gilligan, 1977, 1982; Kohlberg, 1969; Lind, 1997a, 1997b, 1997c, 2000; Williams & Carpenter, 1990) resulted in the assumption that the dependent and independent variables are related to and interact with one another (Refer Figure 2.1).

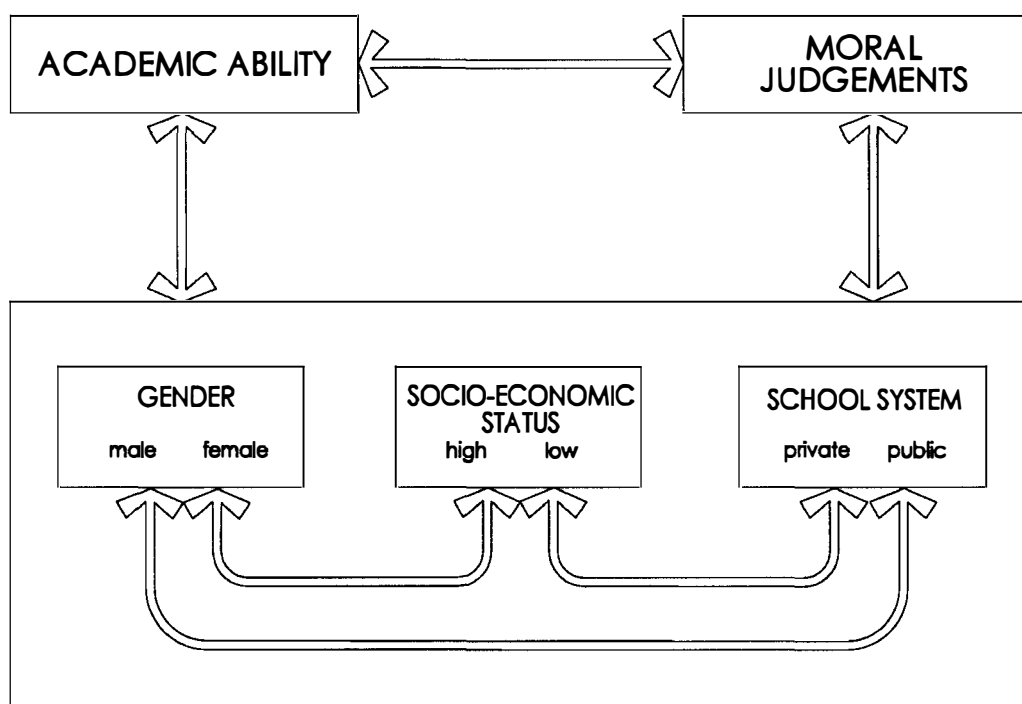


Figure 2.1 Conceptual framework

Moral Judgements

Moral judgements influence everyday lives, from the decisions people make to actions based upon those decisions (Kohlberg, 1969b). Thus, as an integral part of life, moral judgements are considered an important component of education, and education as important in the fostering of competencies in (Lind, 1997b), and, the development of moral-cognitive stages (Kohlberg, 1981).

Piaget's (1965) theory of cognitive developmental stages which postulates that there are differences in children's thinking at different ages formed the basis for Kohlberg's (1969a) theory on the development of moral judgement, which proposed an invariant sequence of moral development with three levels each consisting of two stages with "each successive stage representing a more adequate construction of the moral problem" (Gilligan, 1977, p.483).

Kohlberg (1969) conducted longitudinal cross-cultural studies, researching adolescent boys' responses to moral dilemmas, from which he created a theory of prescriptive and universal levels of development in moral thought. The dilemmas were aimed at posing a moral problem requiring a moral judgement to be made. Each question was posed to identify the reasoning used in the judgement-making process. Baumrind (1978) criticised the test instruments as artificial, claiming the dilemmas did not reflect real life situations. Further studies by Kohlberg (Higgins, Power & Kohlberg, 1984) however, included real-life dilemmas which supported the original findings, thus it appears the context of the dilemma does not compromise the outcome.

Many critics have questioned Kohlberg's methodology, highlighting such issues as: (a) a lack of evidence for a developmental sequence between the conventional to the postconventional stages; (b) mixing the morality and conventionality domains; (c) claiming that development accounts for the differences in moral reasoning; and, (d) most significantly, generalising the results when gender bias was of particular issue (Damon 1975, 1977, 1980, 1983; Gilligan, 1977, 1982; Murphy & Gilligan, 1980; Shweder, Mahapatra, & Miller, 1987; 1990; Turiel, 1983; Turiel & Davidson, 1986). On this final point, Gilligan (1982) questioned the generalisability of Kohlberg's (1969) studies as only males were used, thereby not representing the larger population due to gender bias.

Others consider Kohlberg's theory a seminal contribution to modern moral development (Fischer, 1983; Lind, 1997b; Rest, Navarez, Bebeau & Thoma, 1999; Saltzstein, 1983). Indeed, some valuable contributions as noted by Saltzstein (1983) included the respectful treatment of young children's moral thinking, ensuring responses are valued; and the idea of constructivism, offering an alternative to

existing learning theories whereby moral constructs are formed by the individual not learnt by induction. The statistical, methodological and theoretical limitations from earlier research by Kohlberg (eg. 1969, 1982) were addressed in subsequent studies (Colby, Kohlberg, Gibbs & Lieberman, 1983) which found consistent results for the developmental sequence of stages, thereby supporting Kohlberg's original cognitive-developmental theory (1969).

Lind's (1997a, 1997b, 1997c, 2000) work is premised on Kohlberg's early research into moral reasoning. His critique of early theories and tests, the Moral Judgement Interview (MJI) (Kohlberg, 1969a, 1969b) and the Defining Issues Test (DIT) (Rest 1973, 1974) led him to propose a dual-aspect model of moral judgement with a competency test, the Moral Judgement Test (MJT). The MJT is based upon Piagetian forms of dilemma testing and is similar in structure to Rest's DIT (Lind, 1977, 1997a). The MJT, however, differs primarily in the data collection method and scoring. Subjects are assessed on the moral judgements they make and the consistency of their justification of those judgements, both in the affective and cognitive domains of human behaviour (Lind, 1977, 1997a, 1997b, 1997c). Importantly, the MJT is a measure of moral judgement competencies rather than moral attitudes, and not an assessment by inference as in other tests (Lind, 1997b). Lumsden (1976) defined the MJT as a behavioural experiment rather than a classic psychometric test, in terms of how data is assessed and findings extrapolated.

In the standard version of the MJT, two moral dilemmas consisting of 24 arguments, six pro and six con, are presented to the subjects. Each argument is designed to reflect a stage of Kohlberg's moral reasoning approach (Kohlberg, 1984; Lind 1997a). A judgement is required on the protagonist's actions in each dilemma, following this, subjects judge the pro and con arguments presented. Judgements on

the strength of the arguments are recorded on a Likert scale, ranging from -4 (strongly disagree) to +4 (strongly agree). Results are scored and indexed, showing the relationships of judgements and the consistency of the judgements made (Lind, 1997b). Assessment is then made of the “cognitive aspects of moral judgement behaviour” (Lind, 1997b).

Administration of the test requires no special training. The MJT was designed as a multi-variate N=1 experiment which is scored through analysis of variance components to ensure “unambiguous inference[s] to be drawn [from the responses]” (Kohlberg, 1984, p.401; Lind, 2000, p.2). Further, this design enables responses to be scored as “properties of a person’s moral-cognitive structure, rather than properties of the instrument like ‘measurement error’ or ‘unreliability’ ” (Lind, 2000, p.3).

Lind discusses validity in terms of empirical and theoretical validity, stating that theoretical validity “is of paramount importance” (Lind, 1997b). Lind also reported that “the MJT is theoretically valid by virtue of construction” (Lind, 2000), in that it is the only test explicitly designed to contain a moral task, thus reflecting the theory. The MJT has been exposed to stringent testing procedures to ensure validity, thus optimising the construction of the MJT and to secure the test.

With reference to the MJT, the author firstly engaged in a review of the literature and interviews from Kohlberg’s MJI (Colby et al, 1987a, 1987b). Secondly, ratings on all test items were provided by experts based upon Kohlberg’s cognitive-developmental theory and moral developmental stages (Lind, 1997b). Thirdly, empirical tests were conducted on small groups. Finally, empirical validation checks were performed on the MJT. Testing continued over approximately two decades involving some 15,000 subjects in a range of cross-

cultural, longitudinal, representative and laboratory studies (Lind, 1997b; Lind, 2000; refer to Lind, 2000, for a list of studies and tests upon the MJT).

The MJT is designed to serve two purposes; firstly, as a valuable tool to “test modern theories of moral development and education” (Lind, 1997b, p.11). Secondly, the MJT provides a means of evaluating and assessing the functionality of current educational practices with regard to “enhancing moral competencies” (Lind, 1997b, p.11).

Lind (1997b) purports the MJT provides data to show that:

1. Moral judgement and behaviour have a strong competence factor;
2. Moral judgement competency can be fostered through education;
3. People’s moral competency regresses if education is insufficient.

In view of this, it is surmised that moral judgement competencies are interdependent with education and the cognitive development of students. Indeed, Lind (1997c) postulates both the affective and cognitive aspects are distinct yet inseparable parts of cognition [and academic ability] and moral judgements.

Academic Ability

A definition of academic ability is provided by Smith & Hagues (1993) as the reasoning processes used by students to “understand and assimilate new information and ideas” (p.1). Similarly, Maltby, Gage & Berliner (1995), defined academic ability as an aspect of intelligence. Snyderman & Rothman (1987) noted three important abilities as determined in their study, namely abstractions, problem solving and learning.

Abstractions are those abilities concerned with managing new ideas and concepts, and the ability to effectively process new information. Second, solving

problems is the ability to deal with new and varied conditions in unique ways. Finally, the ability to learn encompasses the whole spectrum of attaining and applying knowledge.

The ability to learn is reported to be detrimentally affected for students from low SES backgrounds (Desimone, 1999; Pyrt, 1996). Studies conducted in the United States reported correlations between low academic achievement and low SES (Desimone, 1999).

Maltby, Gage & Berliner (1995), outlined the importance of assessment and tests of academic ability, stating that "...understanding how intelligence [and therefore, abilities] is organised is important ... because of the implications for educational practice" (p.51). Angus (2000) states "ability tests are variously known as IQ tests, tests of cognitive ability, intelligence tests...etc" (p.2). The goal of ability tests is to determine "how *able to learn*" (p.2) a student is.

The NFER-NELSON Non-verbal Reasoning 8 & 9 test, assesses a subject's non-verbal reasoning abilities by the solving of a series of puzzles. The raw score is converted to a standardised score to give a predictor of ability. Significantly, the NFER-NELSON Non-Verbal Reasoning 8 & 9 test doesn't "confound the assessment with any other irrelevant knowledge or skills" (Smith & Hagues, 1993, p.1).

The test is intended for use with subjects of 8 and 9 years of age, however testing of subjects aged 7years 3 months to 10 years 3 months is acceptable (Smith & Hagues, 1993, p.1). Questions which incorporate classification, series and matrix questions in a linear set, are easy to follow and understand.

Administration of the test requires no special training, however, the researcher needs to be familiar with the test and the procedures prior to testing

(Appendix F). Marking of the test is conducted using a marking key from the manual; one mark is allocated for each correct answer, no marks are allocated for incorrect or ambiguous answers. The total of correct marks provides a raw score, which is converted to a standardised score, enabling comparison with a large nationally representative sample (Smith & Hagues, 1993). These scores allow placement of subject's scores on a scale to indicate where students are positioned in terms of their ability. In addition, the subjects' ages are taken into account so an allowance can be made for different ages (in months), of subjects.

Reliability of the NFER-NELSON Non-Verbal Reasoning 8 & 9 test series was derived from the Kuder-Richardson 20 formula (KR20) which "measures the internal consistency of the test" (Smith & Hagues, 1993, p.19). The test reliability is 0.935 which is considered "suitably high for a modern non-verbal reasoning test" (Smith & Hagues, 1993, p.19).

Previous research of academic ability has explored issues such as gender bias (Francis, 2000; Gurian, 2001; McKerrow, 1998) finding differences in academic abilities between genders. Such bias may affect studies of academic ability, "making gender a variable of no significant import" (McKerrow, 1998, p.1).

Consideration of the literature and research findings has led to the conceptual notion that the variables under study are all related to academic ability. Academic ability will be tested to determine if any relationships between moral judgements, school systems, SES and gender exist within this sample of the population.

School Systems: Public vs. Private Education

Today's society is competitive and dynamic, one where success and academic achievement are enhanced by a sound education (Chomsky, 1996; Marginson,

1997a; Saul, 1993). As schools are taking on market-place competitiveness, parents are increasingly able to source the type of education, which they believe best meets their children's needs (Block, 1993; Funnell, 1995; Stromquist & Monkman, 2000). As consumers [of education], parents will select a school for their children which enhances their children's education, encourages a higher school completion rate and which increase the student's chances of securing a place in the workforce (ACER, 1980). Additionally, results from the same study by ACER found that students in private schools achieved higher academic levels than those in public schools. In the same study there appeared a relationship between school location, finishing year at school, and success in the workplace. More recently, Anderson (1993) and Williams & Carpenter (1990) found that 25% of Australian school children attend private schools. This is comparatively the highest proportion of private school attendance in any Anglo-American country (Arroyo et. al., 1999). Other international private school systems are either declining or are static in numbers while UNESCO (1989) first reported the Australian private sector's continuing growth 14 years ago, with more children being enrolled in private schools each year.

The public schools value social equality and justice and show a community cohesion by their deliberate non-selection of students (Connors, 1989). Public schools provide a free education for children of all cultural identities, so as "...to protect the coherence of society by transmitting and shaping the core of common principles which hold us together as a civilised society" (Connors, 1989, p.5). By contrast, private schools are free to advertise and choose their students, select those they want and reject or unload those who are troublesome (Anderson, 1993).

Studies are consistently showing that private schools are the preferred providers of today's education (Anderson, 1993; Maslen, 1982), leaving public

schools to consider their impact as educational institutions as numbers of enrolments and resources decline (Anderson, 1992). Further, the academic abilities of students are reportedly higher in private schools where this is valued by parents to a high degree (Marginson, 1997; Williams & Carpenter, 1990).

In this study, school system is an independent variable to be considered in the testing for a relationship between moral judgements and academic ability.

Socio-Economic Status

Socio-economic status (SES) has been a heavily researched area (Desimone, 1999; Hale, 1982; Kozol, 1991; Nyhan & Alkadry, 1999; Ogbu, 1978, 1987; Pyryt, 1996). Studies have shown that, low SES is correlated with low academic achievement (Pyryt, 1996). Desimone (1999) noted that children from low SES backgrounds do not have “the same educational opportunities...as middle-income [SES]...children” (p.11). Hale (1982) argued that these same students are not born into effective learning environments, which in turn affects their ability to learn. Nyhan and Alkadry (1999) noted the students with long term poverty [low SES] or those attending a school with a high population of poor students produced lower test scores than their counterparts. Desimone (1999) noted that parental involvement influences academic achievement and differs according to SES - those from a high SES tended to be involved in their child’s education and those from a low SES did not participate to the same extent.

The variability between low and high SES is related to the school systems debate. Williams and Carpenter (1990), argued that as high fees are required for private school education, to be able to afford to pay for private education, it may be assumed that private school students come from high and middle-income families –

those from a high SES. Public schools generally comprise a mixture of SES backgrounds, depending upon the area in which they are located.

SES is an important variable in all studies concerned with the general population as it has a proven effect upon academic ability. To allow for differing SES factors, this study will take samples from both high and low SES areas within the public and private system.

Gender Studies

Gender difference, in education, academic ability and moral judgements is noted in many studies (Baumrind, 1986; Bernard, 1973; Gilligan, 1977, 1982; Walker, 1984, 1986). Research into the intellectual differences between girls and boys has not produced conclusive findings. In reviewing relevant literature, Maltby, Gage & Berliner (1995) found that “Mean differences when they occur are small...Overall, no dramatic differences between the sexes are noted when we measure general intelligence” (p.177). Jacklin and Maccoby (1972) claimed research overestimates gender differences. Further, Francis (2000) argued that though progress had been made academically for both boys and girls, the difference in their achievement is nominal. In contrast, Bernard (1973) found differences in boys and girls citing environmental influences as factors, which affected the difference. Gurian (2001) in recent research, argued that brain-based research showed significant differences in learning styles between boys and girls.

Gilligan’s (1977) research of the gender-related issues disputed Kohlberg’s (1969) findings on methodological grounds. Further, Gilligan’s (1977) research into moral reasoning found that females tended to operate from a care orientation whereas Kohlberg’s studies provided findings that males tended to operate from a justice

orientation (Gilligan, 1977; Rest et. al., 1999). Freud (1961) and Piaget (1965), both acknowledged that differences existed in the sensibilities of men and women, boys and girls. This was further supported by Haan (1975) and Holstein (1976) who questioned the possibility of gender bias in Kohlberg's findings and the inferences he makes. Gilligan (1977) concluded that Kohlberg could not generalise his findings as he had "confounded the variables of age, sex, type of decision and type of dilemma" (p. 515).

Following this, Walker (1984) conducted a comprehensive meta-analysis reviewing 31 studies to explore if gender differences existed in moral development. Results showed that, of 41 samples, varying in size of 12 to 426 subjects, only six significant differences were reported, of these, females exhibited a more mature development. Walker concluded that female and male moral reasoning is "remarkably similar" (p.688). Baumrind (1986) argued that Walker's (1984) study was not valid due to early female development and for utilising a theoretically invalid analytical test, the Kolmogorov-Smirnov test. Walker (1986) refuted the claims, conducting another meta-analysis with a larger sample and using a different analytical test, the Mann-Whitney test. The results, other than for minor changes remained the same as the original findings, with Walker (1986) drawing the same conclusion, that gender differences in moral judgements are remarkably similar.

The bulk of research has shown that differences between genders may be significant and therefore should be acknowledged as a factor when conducting studies. This study ensures that gender differences are considered by sampling the population from year five males and females.

CHAPTER 3

METHODOLOGY

Overview

Presented within this chapter is the methodology of the current research study. First, the design of the research is explained. Second, the sample selection of the population, schools and subjects are indicated. Third, the settings and materials are introduced. Fourth, the test instruments used in the current study are explained. Fifth, the procedures undertaken in the research study for the Moral Judgement Test, followed by the NFER-NELSON Non-Verbal Reasoning 8 & 9 test are stated. Sixth, the data collection methods are outlined. Following this, the procedures for scoring of the tests are articulated. To conclude this chapter, the procedures employed in substantiating internal validity are considered. Finally, reference is made to the method used to reduce threats to external validity.

Design of the Study

The present research was designed to collect data from a sample of mixed gender year five students attending public and private schools, drawn equally from high and low socio-economic areas.

The current research study examined the relationships between groups to test the hypotheses. As two dependant variables were being investigated, a Multivariate analysis of variance (MANOVA) was selected to determine the existence of relationships (Schumacher & McMillan, 1993).

A 3 x 2 x 2 factorial design as shown in Table 3.1 represents the design of the study.

Table 3.1

3 x 2 x 2 Factorial design

	SCHOOL SYSTEM	GENDER	SOCIO ECONOMIC STATUS
ACADEMIC ABILITY	public private	male female	high low
MORAL JUDGEMENTS	public private	male female	high low

Sample Selection

The Population Sample

The sample for the current research was drawn from a population of year five students from the Perth metropolitan area. Year five students were chosen as this age group are considered to be cognitively mature and sufficiently linguistically capable to effectively participate in the research (Maltby, Gage & Berliner, 1995). Developmentally, Piaget categorises year five students as being in the concrete operational stage and Kohlberg as at the conventional stage of moral development. Further, it was considered that this age group would present none of the complications of early adolescence such as: reluctance to participate in the testing and; bias in completion of the tasks as influenced by the opposite gender.

Purposeful sampling (Cohen & Manion, 1994) was used to select the subjects. Sample selection was limited to a section of the population as wide generalisability was not the purpose of the study. The sample selection process is presented in Figure 3.2.

INDEPENDENT VARIABLES

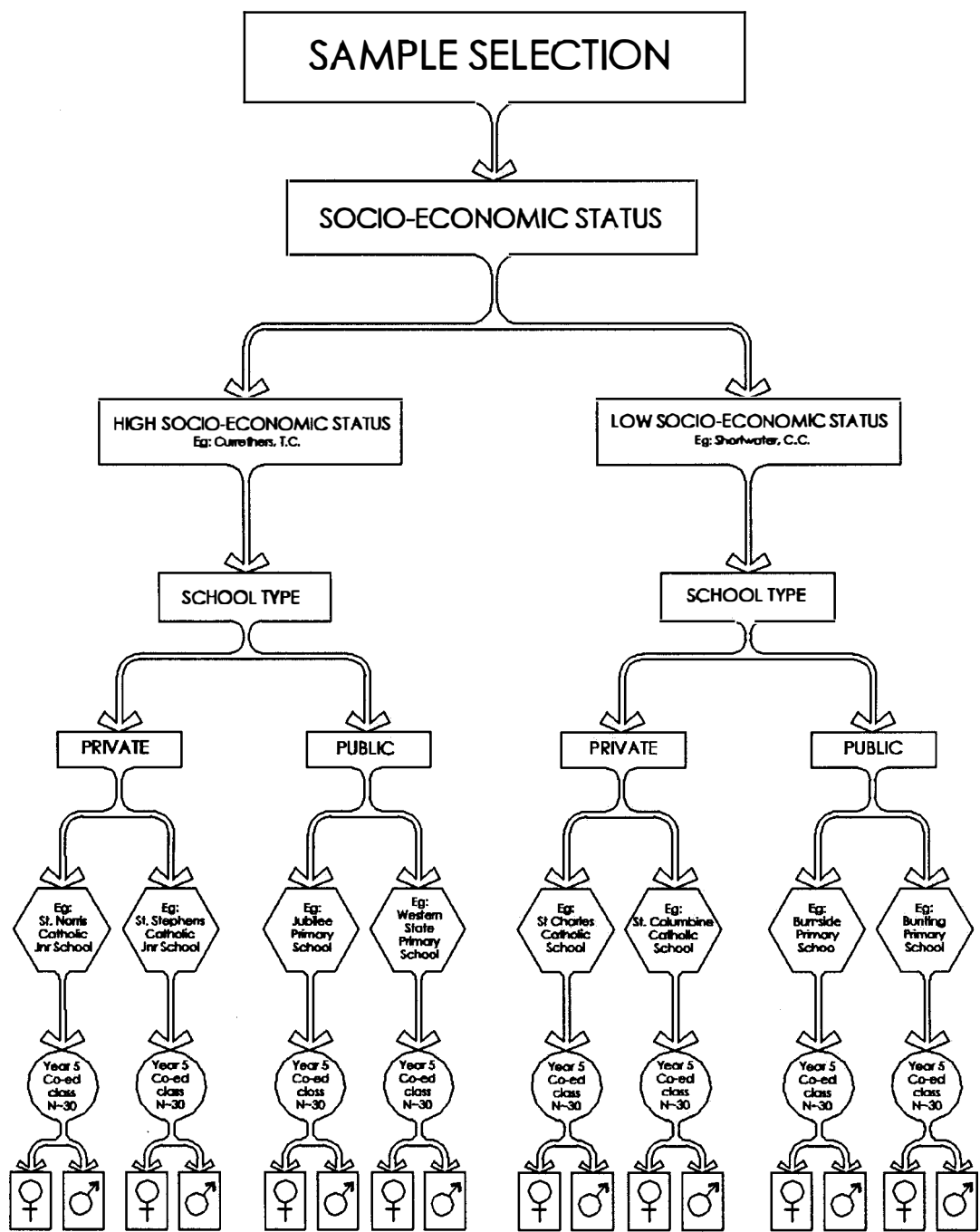


Figure 3.2 Sample selection

The School Sample

Four schools from the Perth metropolitan area were selected by purposeful sampling. The sample included two private schools and two public schools with two from a high SES and two from a low SES area. Household income was used to determine SES neighbourhoods as reported in the 1998 Census statistics (ABS, 1998). The sample from school one maintained a 99% attendance of students living within the same SES area as the school. The sample from schools two and four were composed of 100% of the student population living within the same SES area as the school location. The sample from school three had a population of 87% living within the same area as the school. However, the statistics were considered to be sufficiently high to include school three within this study. Karmel (1973), in defining disadvantaged schools from low SES areas, found that the neighbourhood, because of the important influence upon children is acceptable to use in defining areas of SES. To control for the possible impact of religious education upon a student's morals, Catholic schools were chosen as representative of the private school system, as they maintain a structured religious education programme.

Schools were contacted via the principals who were telephoned to gauge their provisional interest in the research study, dependent upon teacher interest. Information packages containing a letter of introduction, a description of the current study and a consent form for the principal were delivered to each school (Refer Appendices A&B).

A further information/consent package containing the teacher and parents/guardians letters and consent forms for distribution (Refer Appendices C, D & E) was delivered to the school upon confirmation of interest. Timetables for conducting the research were negotiated with each classroom teacher.

The Subject Sample

Subjects were selected according to the independent variables of SES and school system. Age range of subjects was between 8years 10 months and 10 years 3 months, with the mean age being 9 years 10 months. No attrition occurred during this study. The total number of subjects in the final analysis was N=80, and the smallest school group N=16. The composition of the final sample is shown in Table 3.2.

Table 3.2

Composition of Subject Sample N=80

SES	School	N	School system	Mean age
High	School 1	20	Public	9 years 11 months
	School 3	26	Private	9 years 10 months
Low	School 2	18	Public	9 years 9 months
	School 4	16	Private	9 years 10 months

Settings

To reduce ecological effects such as the Hawthorne effect (Schumacher & McMillan, 1993) and to conduct the current study in as naturalistic setting as possible, all data was gathered in the classroom of the sample groups.

Materials

Materials used in the current study included instruments for data collection, namely, two paper and pencil tests. Firstly, the Moral Judgement Test (MJT) comprising a two-page sheet presenting two moral dilemmas and 26 scaled responses (Appendix H). The NFER-NELSON Non-Verbal Reasoning 8 & 9 test which utilised a question and answer booklet containing 42 designs and related questions. Subjects were provided with lead pencils to complete both tests. A guideline for the procedure and time schedule used by the researcher in all testing procedures and subsequent data collection is shown in Appendix G. The classroom whiteboard was used to mark starting and finishing times for the procedure with time kept by the researcher.

Instruments

Moral Judgement Test.

The MJT is based upon “modern, cognitive-structural approaches to psychological measurement” (Lind, 1997b, p.7). Similar to approaches undertaken by Kohlberg (1984) and Piaget (1965) two domains of morality, cognitive and affective, are investigated. The MJT measures moral judgement competence rather than moral orientations or attitudes (Lind, 2000).

Specifically, the MJT is a test assessing subjects’ consistency of arguments [competence] to a given moral dilemma (Lind 2000) based upon Lind’s dual-aspect theory (Lind 1997). The theory reflects moral philosophy and empirical research and is based upon “moral behaviour and thinking” (Lind 1997), consequently, both affective and cognitive properties are considered when describing moral competence (Lind, 2000).

NFER-NELSON Non-Verbal Reasoning 8 & 9.

The NFER-NELSON Non-Verbal Reasoning 8 & 9 test (Smith & Hagues, 1993) was selected as a test of ability. The test assesses the subjects' ability to "recognise similarities, analogies and patterns in unfamiliar designs" (Smith & Hagues, 1993, p.1).

Procedure

Parental consent was obtained from the parents or guardians of each child participant prior to commencement of testing and data collection.

Data gathering commenced in week 7 of term 2 and was completed by week 9 of term 2. Testing and data collection was consistent in each school with the NFER-NELSON Non-Verbal Reasoning 8 & 9 administered in the morning, prior to recess and the MJT test prior to lunch. Testing was conducted in the subjects' own classroom with the exception of schools two and three. Testing in school two was conducted in the combined year four and five classroom, the year fours being absent, and four year five students from a combined year five/six classroom present to ensure sample size. Similarly, testing in school three was conducted in the year five classroom. The sample consisted of 14 students from one year five class and 12 students from a second year five class to ensure sample size.

Students were seated at their desks and asked to complete problems independently where two or more students were sitting together. Further, to reduce Hawthorne effects (Cohen & Manion, 1994) emphasis was placed on the sessions as being *activities*, not *tests*.

To limit disruption effects (Christensen, 1997), desk configurations remained as usual in each classroom. Schools one and four had grouped desks with up to 6

students in each cluster. School two had a combination of grouped desks and one row of desks. Finally, school three had the desks set in rows, with no grouped clusters.

The researcher used and referred to a step-by-step guideline (refer Appendices H & I) to reduce instrumentation or experimenter effects (Schumacher & McMillan, 1993). The whiteboard in each classroom was used to display start and finish times for the activity.

On completion of each testing procedure students would raise their hand, the researcher would collect the paper and the student would then silently read. Subjects were restrained from talking during and after testing so not to interrupt, influence or disturb other subjects. Following are the specific procedures taken for each test.

Data Collection Methods

Moral Judgement Test.

The MJT required 60 minutes for implementation and completion of the two dilemmas. The researcher introduced the test as two dilemmas and requested each student to consider the problem and consequently, provide their opinion. A Likert scale was displayed on the whiteboard, the researcher illustrating procedures for completion of responses. To eliminate possible misinterpretation of the arguments, the researcher read the dilemmas to the subjects and read each argument in the guise of the antagonist for the con arguments and conversely, the opposer for the pro arguments.

Subjects were given each dilemma, one per page, which displayed pro and con arguments and Likert scales for scoring their responses (Refer Appendix H).

Subjects marked their opinion of the argument on the Likert scale ranging from --4

strongly disagree to +4 strongly agree. Responses were marked with a pencilled circle around the representative number. Subjects were provided with time to re-read the dilemmas and give their responses, ensuring that no pressure was put upon any subject. Moral judgement dilemmas were handed to the researcher upon completion and subjects thanked for their participation in the study. Refer to Appendix G for complete procedural guidelines as used by researcher.

NFER-NELSON Non-Verbal Reasoning 8 & 9

The NFER-NELSON Non-Verbal Reasoning 8 & 9 required 40 minutes to administer, with 15 minutes for the introduction and 25 minutes for the test. The researcher followed a pre-prepared guideline (Refer Appendix F), so as to limit Experimenter effects (Schumacher & McMillan, 1993). The test was introduced as a series of puzzles, so as to reduce subject effects (Schumacher & McMillan, 1993) and the subjects were invited to meet the challenge of solving as many puzzles as they could in the time allocated.

Booklets containing the puzzles and lead pencils were supplied to each subject, the subjects completed their personal details for data purposes. The researcher presented and explained the examples, checking for understanding. The subjects completed timed practice questions with the answers provided and explained by the researcher on completion. Following this, the subjects completed the test questions in the allotted time.

Upon completion of the test, subjects were encouraged to check their answers, if time permitted. Booklets were handed to the researcher and subjects thanked for their participation in the study. Refer to Appendix F for complete mimeograph directions as used by researcher.

Scoring of Tests

Moral Judgement Test.

The responses for the arguments as presented in the MJT were scored according to Lind's (1998) marking key. Each question has 9 possible responses found on the Likert scale -4 to +4 (Refer Appendix I). Each response is allocated a score based upon Kohlberg's stages of development (1969), for example, a positive response of +3 to an argument may be given a stage two score. The scores are not linear to protect against subjects attempting to score a high moral competence thus skewing results. To increase the likelihood of scores being correct (Lind, 1998), the data was submitted to two checks, by hand and electronically.

NFER-NELSON Nelson Non-Verbal Reasoning 8 & 9

Responses to the designs were marked right or wrong. One mark was awarded for each correct answer, no mark was awarded or deducted for incorrect answers.

The sum of scores was used as the final raw score. Using the conversion table provided with the test pack, a standardised score was allocated to each subject. Data from both tests was collated and entered into SPSS 10 (Coakes & Steed, 2001) for analysis. The mean was calculated for the standardised scores of the NFER-NELSON Non-Verbal Reasoning 8 & 9, $\bar{X}=101.61$. Consecutively, the mean was calculated for the C-index scores for the MJT, $\bar{X}=14.5783$.

Internal Validity

The researcher acknowledges threats to the internal validity of the current study. Firstly, possible bias in the sample selection due to purposive sampling

(McBurney, 1994; Cohen & Manion, 1994), was reduced by canvassing of several schools exhibiting the necessary criterion. Selection of participant schools was determined by availability. Secondly, to reduce possible experimenter effects (Schumacher & McMillan, 1993) a guideline (Appendices F & G) was strictly adhered to during testing and data collection sessions (Wolery, Bailey & Sugai, 1988).

External Validity

The following procedures for reducing external threats to the design of the current study were followed. Firstly, the researcher remained as unobtrusive as possible during testing to control for Hawthorn effects (Cohen & Manion, 1994). Secondly, prior to data collection, class teachers informed the subjects they were not being tested but rather, providing information for a university project. Finally, students in all schools were tested at the same time of the day.

CHAPTER 4

DATA ANALYSIS

Overview

As conceptually and theoretically the dependent and independent variables were believed to be related, and as the model under investigation consisted of multiple dependent variables, it was considered appropriate to analyse the raw data using a MANOVA (Schumacher & McMillan, 1993). The software package SPSS 10 (Coakes & Steed, 2001) was used for this purpose. All tests were undertaken using an alpha level of .05.

Descriptive Statistics

Descriptive statistics were generated to determine if any unusual or unexpected trends appeared. As indicated in Table 4.3, no abnormalities in the data are evident. The greater standard deviation for dependent variables vis-à-vis independent variables is to be expected given the nature of the dependents.

Table 4.3

Descriptive Statistics for variables under study

	N	Range	Minimum	Maximum	Mean	SD	Variance
GENDER	80	1	1	2	1.41	.50	.245
SCHOOL SYSTEM	80	1	1	2	1.53	.50	.253
SES	80	1	1	2	1.43	.50	.247
AA ^a	80	58	70	128	101.61	13.11	171.962
MJ ^b	80	42.08	.47	42.55	14.5783	10.1066	102.143

^aDependant variable Academic Ability

^bDependant variable Moral Judgement

Inferential Statistics

Assumption Testing

Assumption testing was undertaken to ensure that MANOVA assumptions had not been violated. Five test were undertaken and consisted of:

Cell Sizes

As there were two dependent variables and 80 cases, assumptions of normality and equal variances were of little concern.

Univariate Normality

This was undertaken for each dependent variable using the “Explore” function. Results (Figure 4.3 for Academic ability; Figure 4.4 for moral judgements) indicate that assumptions of univariate normality were not violated.

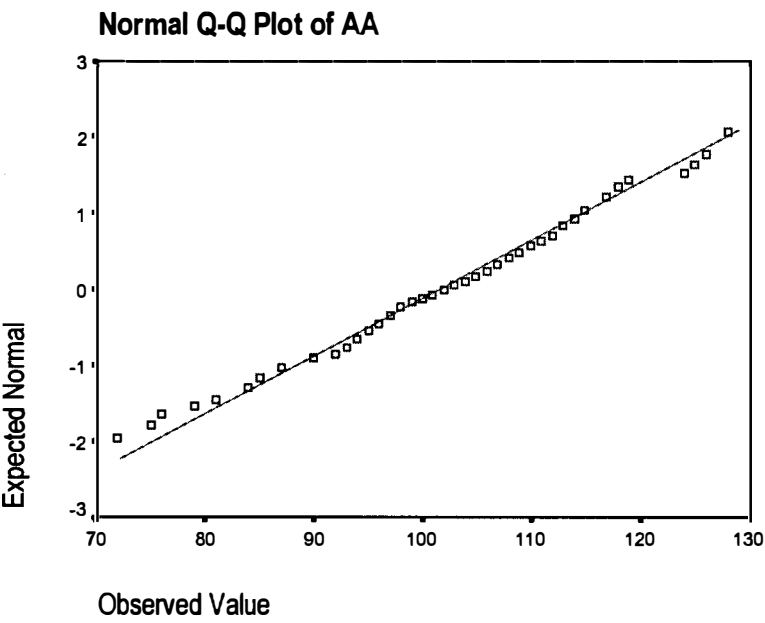


Figure 4.3 Scatterplot showing univariate normality for NFER-NELSON Non-Verbal Reasoning 8 & 9 scores

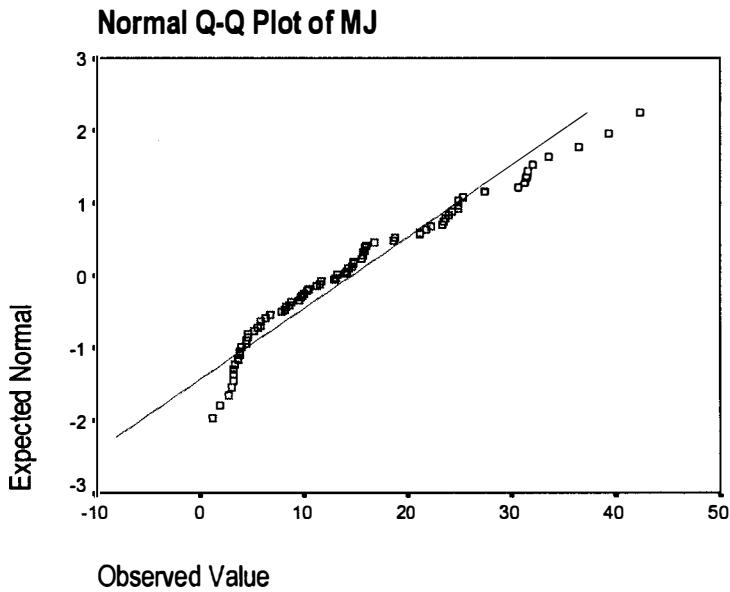


Figure 4.4 Scatterplot showing univariate normality for Moral Judgement Test scores

Multivariate Outliers

Outliers were assessed using the *Mahalanobis Distance* statistic. Using ID (numbers assigned to individual cases) as the dependent variable and all other variables as independent variables, a coefficient was computed. The critical value of chi-square, for two dependent variables, at an alpha level of .001 was reported as 11.72. No distances exceeded this standard error of the estimate, indicating that there were no outliers. This was confirmed by the Regression line (Figure 4.5).

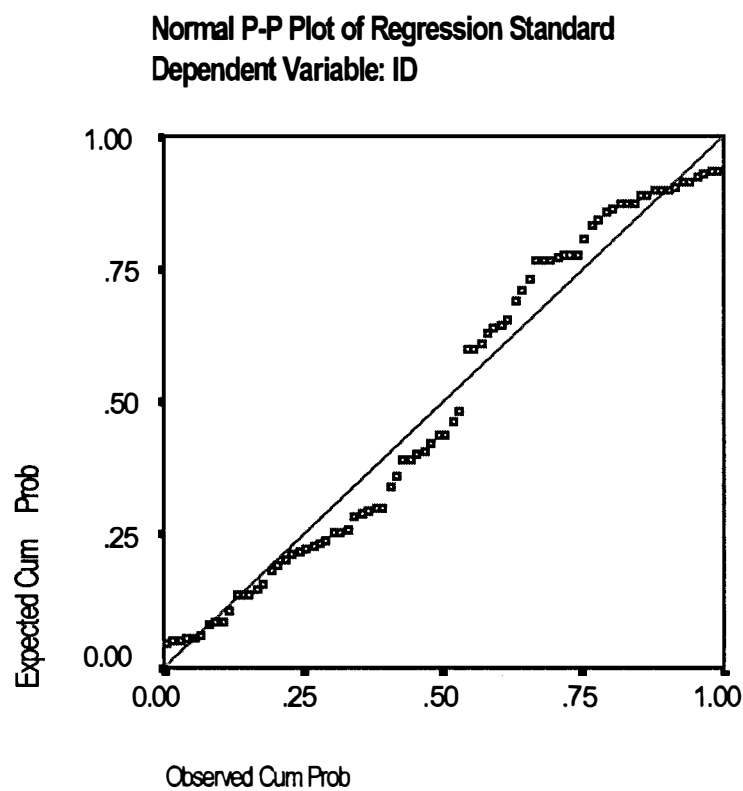


Figure 4.5 Scatterplot showing regression between dependant variables

Linearity

Linear relationships among all pairs of dependent variables was assumed and verified using an overlay scatterplot (Figure 4.6).

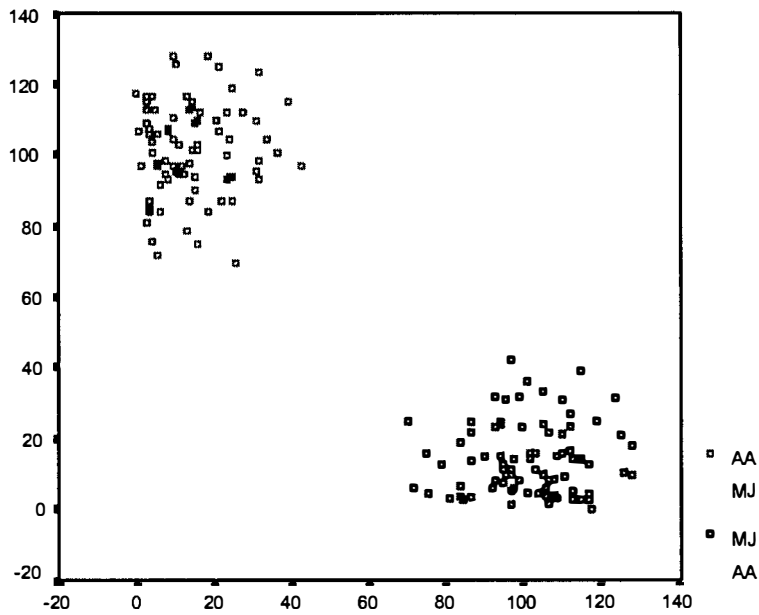


Figure 4.6 Scatterplot showing linearity among pairs of dependent variables

Multicollinearity

A Pearson Product Moment correlation coefficient was computed to determine collinearity between the dependent variables AA and MJ. The correlation coefficient was sufficiently distant from zero to be insignificant factor (Table 4.4).

Table 4.4

Correlations among Dependent Variables

		AA	MJ
AA	Pearson Correlation	1.000	.053
	Sig. (2-tailed)	.	.642
	N	80	80
MJ	Pearson Correlation	.053	1.000
	Sig. (2-tailed)	.642	.
	N	80	80

Multivariate Analysis of Variance

A general linear model was tested with between-subjects factors as identified in Table 4.5. The independent variable sub-categories were identified and it was found that there were sufficient cases in each cell to enable the desired statistical analyses to be performed.

Table 4.5
Distribution within cells: Independent Variables

			Σn
GENDER	1	Male	47
	2	Female	33
SCHOOL SYSTEM	1	Public	38
	2	Private	42
SES	1	High	46
	2	Low	34

A MANOVA was undertaken to determine the extent of interaction of the independent variables on the dependant variables. Results indicated that that there were no main effects for either AA, $F(1,72)=2.51, p>.05$; or MJ, $F(1,72), =1.56, p>.05$.

Univariate Analysis of Variance

Next, main effects for independent variables were examined separately. Table 4.6 indicates that the only significant interaction was between SES and AA, $F(1,78)=3.85, p<.05$. An independent samples *t-test* confirmed this result, $t(78)=1.96, p<.05$.

Table 4.6

Main Effects by Independent Variables

Indep Var	Dep Var	Mean Sqr Effect	Mean Sqr Error	f (df 1,2) 1,78	p-level
Gender	MJ	126.24	101.83	1.23	.26
	AA	172.24	171.95	1.00	.32
School System	MJ	12.74	103.28	0.12	.72
	AA	347.60	169.71	2.04	.15
SES	MJ	25.64	103.12	.24	.61
	AA	639.63	165.96	3.85	.05

CHAPTER 5

DISCUSSION

The results of this study found a significant difference between academic ability and SES, $F(1,78)=3.85, p=.05$. These findings concur with previous research, Arroyo et. al. (1999) and Desimone (1999) who argued that low SES factors adversely affected academic abilities.

The other variables showed no significant relationships in the current study. Previous research is available to support this finding, Hartshorne & May (1928), for example, concluded that school system and religious education are not necessarily related. In their formative study, Hartshorne & May (1928) researched this area, the results of which have since been supported by more recent studies such as those undertaken by Hoffman (1970, 1979) and Emde, Zeynep, Clyman & Oppenheim (1991). Moral judgements and gender were shown to vary little in studies by Walker (1984, 1986). Finally, Maltby, Gage & Berliner (1993) found little conclusive evidence to differentiate between academic ability on the basis of gender. Cautiously, these findings are inconclusive, as external factors such as family influences, church attendance and extra curricular activities were not controlled for.

Hypothesis 1

There is no difference in moral judgements of year five children between school, gender or SES.

School Systems

The results of this study found there was no significant difference between moral judgements of year five children and school system, $F(1, 78) = 0.12, p > .05$. This is supported in previous research by Hartshorne & May (1928) who suggest that moral education is not necessarily a function of religious schools, finding no greater moral judgement competencies per student from one school system to the next.

Conversely, Norman et.al. (1998) found private Christian schools provided a supportive moral atmosphere, conducive to moral development, whereas public schools did not to the same extent. These researchers argued that the diverse population in public schools precludes “explicit moral teaching” (p.90). Others have argued that private schools’ indoctrination of values, morals and judgements in the curriculum (Potts, 1999) may have an influence on the moral judgement competencies of the students. Nevertheless, no evidence of such a trend surfaced in the present study.

The current research is by no means conclusive as significant external variables were not controlled. External influences not controlled for in this study include family influences, especially parental influence, church attendance and teacher influences. Further, this study may have affected a significantly different result by using a larger sample size.

Gender

As reported in previous studies (Hartshorne & May, 1928; Walker, 1984), the results of this study found no significant difference between moral judgements of year five children and gender, $F(1, 78) = 1.23, p > .05$. Such a finding supports

Walker's (1984, 1986) conclusion that female and male moral reasoning is "remarkably similar" (1984, p.688).

In comparison, Gilligan (1982), Baumrind (1986) and others, opposed the view of gender similarities. They claimed gender bias in Kohlberg's stage development (1969) and with Gilligan (1982) postulating a separate sequence for female moral reasoning.

Socio-Economic Status

In contrast to previous findings, the results of this study found there was no significant difference between moral judgements of year five children and SES, $F(1,78)=0.24, p>.05$. Hartshorne & May (1928) found that deceit [moral judgements] and SES are definitely associated. Further, results showed students with a high SES deceived less than students with a low SES. This in turn implies a correlation between SES and employment of moral judgements.

The Hartshorne & May (1928) study based SES upon family income from the student's neighbourhood. The current study however, defined SES as the family income from the school neighbourhood, not necessarily the neighbourhood where the student lived, this may have an effect upon results. The subjects, as previously stated lived in the same area as the school, except for School three with 13% of the students living outside of the school area. However, the subjects living in other areas were found to have the same SES criteria and level as the school SES area and thus as the remaining subjects.

Conclusion

The results of this study found that there were no significant differences between moral judgements of year five children divided by school, gender and SES, therefore, the null hypothesis is retained.

In review of the literature there is no conclusive evidence for significant relationships. Lind (1985, 2000) does however, purport that when education is controlled for, no other variables are likely to have the same effect upon moral judgements.

Hypotheses 2

There is no difference in academic ability of year five children divided by school, gender and SES.

School Systems

Previous research consistently presented evidence suggesting a strong positive relationship between academic ability and the Australian school system (Marginson, 1997; Vella, 1994, 1999; Williams & Carpenter, 1990). The results of this study however, found that there was no significant difference between academic ability of year five children and school system, $F(1, 78) = 2.04, p > .05$.

The argument for private school education, especially Catholic school education, and its association with higher academic achievement and ability has been investigated in Australia by Vella (1999) who found "...a positive and substantial effect on academic achievement" (p.208). Following this, Sander (1996) reported that Catholic school students exhibited higher achievement in tests [in the United States]. Williams & Carpenter (1990) in subsequent Australian studies, found that

private education produced better [academic] results than public schools and private schools had an educational advantage over public schools.

The differences between the current study and other research may be attributable to the curriculum being taught, with the new *Curriculum Framework* (1998) students being taught at their own level of learning, rather than the lines of chronological development.

Gender

The results of this study found there was no significant difference between academic ability and year five children and gender, $F(1,78)=1.00, p>.05$. In their analysis of related studies, Maltby, Gage & Berliner (1995) found mean differences to be small. Given recent findings on learning styles of boys and girls, however, (Gurian, 2001) different tests may yield a different gender profile.

Socio-Economic Status

Previous research (Arroyo et.al., 1999; Batten & Russell, 1995; Maeroff, 1998; Smith, 1996; Vella, 1999) indicated that strong positive relationships existed between academic ability and SES. Similarly, the results of this study found there was a significant difference between academic ability of year five children and their SES, $F(1,78)=3.85, p=.05$.

In a review of the research for the last 20 years [in the United States], Arroyo et.al. (1999) found low income [SES] is associated with under achievement [academic ability]. Additionally, Vella (1999) indicated the level of income could affect educational attainment (ie: academic ability).

In Australia, it was found low SES creates stress which in turn may affect the academic abilities of children in school (Batten & Russell, 1995). Connell (1993) stated “children from poor [low SES] families are, generally speaking, the least successful by conventional methods and the hardest to teach by conventional methods” (p.1). Finally, Marginson (1997) noted that in areas of low SES “...growing differences in student achievement, between *strong* and *weak* socio-economic zones, are now evident” (p. 25).

This result clearly showed that SES is a significant factor related to academic ability and as such, ought to be included in future studies of this type.

Conclusion

The results of this study found there was a significant relationship between academic ability of year five children and SES.

Hypotheses 3

There is no relationship between moral judgement and academic ability on the factors, school, gender and SES.

The results of the MANOVA revealed there were no significant differences between the dependant variables; moral judgement, $F(1,72)=1.56, p>.05$ and academic ability, $F(1,72)=2.51, p>.05$ on the independent variables; gender, SES and school system.

Hartshorne & May (1928) however, found that honesty [moral judgement] was “positively related to intelligence” (p.408), ie. students with higher intelligence [ability] are more honest [choose higher moral judgements]. In addition, SES and intelligence [ability] were positively correlated (Hartshorne & May, 1928), indicating

those with a low SES would produce low ability results. Further correlations are reported in Hartshorne & May's study (1928), namely that school achievement affected cheating, suggesting that students with a low SES would cheat more often, indicating a lower level of moral development.

Conclusion

The results of this study found there were no significant differences between the dependant variables; moral judgements and academic ability or the independent variables; gender, SES and school system, therefore the null hypothesis is retained.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

The current study sought to determine any relationships between the dependent variables of academic abilities and moral judgements and the independent variables of, school systems gender and SES. A significant relationship between academic abilities and SES was reported which was consistent with previous research. These findings indicate that SES affected the academic abilities of year five students. No significant relationships were found between the remaining variables.

Limitations of the Study

The current research study had a number of limiting factors. Firstly, the sample was not selected by random sampling but purposeful sampling. The results therefore, may not be representative of the population. Secondly, the arguments in the MJT proved ambiguous for many year five students as evidenced by the researcher during data collection, this may have impacted upon responses and therefore results. Thirdly, the cognitive developmental abilities of the subjects may have been a limiting factor in understanding the MJT, future research in this area may require a pilot study. Fourthly, using Catholic schools to represent the private school system limits the generalisability of this study to the larger population.

Recommendations

Recommendations for further studies are suggested as follows; that:

1. Further research be carried out to determine the differences in relationships among the variables.
2. Further research adopt a longitudinal design to provide information for educators, parents and society.
3. The sample size of the schools is increased to a minimum of eight, as a larger sample may provide greater validity and reliability. The larger sample would also give the analysis greater robustness.
4. The student sample size be increased to a minimum of 160 students, as a larger sample may give differing results. The larger sample would also give the analysis more power.
5. The test instruments are reassessed: (a) the MJT may need to be re-written to reduce ambiguity, making it appropriate to this year level. Re-writing the test, however, will make the research an expensive exercise as the new test would require validity checks; and (b) the NFER-NELSON Non-Verbal Reasoning 8 & 9 test is suitable, however some research shows that girls respond better verbally and boys are predominantly non-verbal (Maltby, Gage & Berliner, 1995). To control for this a verbal test may be required.
6. The age level of the students could be changed to 12 years of age (year seven) as this may increase the level of moral judgements. Kohlberg (1984) and Piaget's (1965) developmental theories indicate children's moral judgement requires logical thought, which is found at the operational stage of Piaget's (1965) developmental continuum (approximate age 12). Kohlberg (1984) states this age and consequently, the operational stage, is when children begin to think morally.

This study considered variables which it is believed affect children's performance in school. Even though only one significant relationship surfaced, a

closer inspection of the other variables under different conditions may prove fruitful. As cognitive constructs, the nature of both moral judgement as well as academic ability are in many ways quite amorphous. As such, further studies along similar lines may give greater insight into children's school performance and understanding of moral judgements.

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Appendix A

Information Letter to the Principal

-----Primary School

30th May, 2001

Dear -----,

I am a student at Edith Cowan University (completing an Honours Program) with an interest in researching if a relationship exists between children's academic abilities and their moral judgements. The information I gather will provide teachers and other researchers with important data from which they can implement new policies to improve teaching and learning.

I would like your permission to include year 5 students from your school in a study which will be conducted during normal school hours. I will require these students for two sessions, the time required will be one session of approximately 40 minutes and the second of approximately 50 minutes.

During these two session times, I will test the students using paper and pencil tests, using the Moral Judgement Test and the Nfer-Nelson Non-Verbal Test, in which they have a series of questions or pictures and an answer sheet on which they complete their answers. These tests are non-threatening and are not used to individually assess an individual child's competency.

In keeping with strict university policy, no identifying information about the students, or the school, will be included in the research report. Students may be withdrawn from the study at any time without prejudice or penalty. A summary of the findings will be made available to the school.

If you consent to your students being involved in the study, please complete the attached form and return it to me as soon as possible.

Thank you for your support.

Sincerely,

Kathy Bancroft

Appendix B

Consent form to the Principal

I _____, Principal of _____
consent to allowing year 5 students from this school to participate in the study about Academic Abilities and Moral judgements. I understand they will be exposed to a moral judgement test and a general reasoning ability test.

I agree that students may withdraw from the study at any time without penalty, of which they will be informed.

I understand that all data collected will be destroyed after a duration of 5 years, from the end of the project. I agree to publication of the results, provided that the research report will contain no information that will identify the students or the school in any way.

Principal’s name: _____

School: _____

Principal’s signature: _____ Date _____

Appendix C

Information letter to Parents/Guardians

Parent or guardian's name

30th May, 2001

Dear -----,

I am a student at Edith Cowan University (completing an Honours Program) with an interest in researching if a relationship exists between children's academic abilities and their moral judgements. The information I gather will provide teachers and other researchers with important data from which they can implement new policies to improve teaching and learning.

I would like your permission to include your child in a study which will be conducted during normal school hours. The time required will be two sessions, one of approximately 1 hour and the other of approximately 40 minutes.

During these two session times, I will test your child using paper and pencil tests, in which they have a series of questions or pictures and an answer sheet on which they complete their answers. These tests are non-threatening and are not used to individually assess an individual child's competency.

In keeping with strict university policy, no identifying information about your child, or the school, will be included in the research report. If you decide to allow your child to participate, you or your child are completely free to withdraw consent and discontinue your child's participation at any time. All data, including your child's test forms will be destroyed after five years.

A summary of the findings will be made available to the school, and to you, if you desire.

If you consent to your child being involved in the study, please complete the attached form and return it to the school as soon as possible.

Sincerely,

Kathy Bancroft

Appendix D

Consent Form to Parents/Guardians

Please complete this form, and return it to school as soon as possible. The top copy is for your own records.

CONSENT FORM

I _____ consent to allow my child _____ to participate in the study about Academic Abilities and Moral judgements. I have read the information provided and am happy for him/her to take part.

I know that I may withdraw my child at any time (and my child knows he/she can withdraw without penalty at any time).

I understand that all data collected will be destroyed after a duration of 5 years, from the end of the project. I agree to publication of the results, provided that the research report will contain no information that will identify my child or the school in any way.

Child's name: _____

Parent's/Guardian's signature _____ Date _____

Please complete this form, and return it to the researcher as soon as possible. The top copy is for your own records.

Appendix E

Information Letter to the Teacher

----- Primary School

30th May, 2001

Dear -----,

I am a student at Edith Cowan University (completing an Honours Program) with an interest in researching if a relationship exists between children's academic abilities and their moral judgements. The information I gather will provide teachers and other researchers with important data from which they can implement new policies to improve teaching and learning.

I would like your permission to include students in your class in a study which will be conducted during normal school hours. I will require your students for two sessions, the time required will be one of approximately 40 minutes and the second of approximately 50 minutes.

During these two session times, I will test your students using paper and pencil tests, the Moral Judgement Test and the Nfer-Nelson Non-Verbal Test, in which they have a series of questions or pictures and an answer sheet on which they complete their answers. These tests are non-threatening and are not used to individually assess an individual child's competency.

In keeping with strict university policy, no identifying information about your students, or the school, will be included in the research report. Students may be withdrawn from the study at any time.

A summary of the findings will be made available to the school, and to you, if you desire.

If you consent to your students being involved in the study, please complete the attached form and return it to the school as soon as possible. I have included a parental consent form for the students to have signed, would you please forward these to the parents.

Thank you for your support.

Sincerely,

Kathy Bancroft

Appendix F

NFER-NELSON Non-Verbal Reasoning 8 & 9 -Guideline

Materials required:

Timer - Watch
 Test booklets (Nfer-Nelson) x 30
 Pencils
 Erasers

Classroom Set-up

Put information/examples on board

- Name eg: Fred W.
- School eg: OLM
- Class eg: 5FA
- Date of birth eg: 7.10.91
- Today's date

- Start time eg:10.00
- Increments of time eg:10.15
- Increments of time eg:10.20
- Finishing time eg:10.25

Separate desks

Instructions:

1. Introduce the test and myself.

“I have a break from work for you – I have a book here full of puzzles which I would like to see how many you can get done in 25 minutes, as best you can. Who thinks they are up to the challenge?”

“I will give each of you a book with the puzzles in and a pencil. I need you to listen to me for instructions before we start.”

“The first instruction is do not open your books until I say.”

2. Second, we need to complete pupil information on front cover, refer to board for examples and complete as a group

- Name
- School
- Class
- Date of birth
- Today's date

3. Third, the times here on the board are the start and finish time, and the time inbetween before you finish. I will call out how much time you have left and I will mark it off the board.
4. Check ALL children have completed information.
5. Listen as I read, turn to page 2.

These questions are about shapes. Here are some examples:

Example 1:

“Choose which of the shapes along the bottom should go in the big oval. The answer letter has been circled for you.”

(Holding up the booklet and pointing to the circled answer)

“The answer is C because all the shapes in the big oval are circles.”

Example 2:

“Choose which box should go next. The answer letter has been circled for you.”

(Holding up the booklet and pointing to the circled answer)

“The answer is D because the number of little black squares increases by one each time you move across the row of boxes.

Example 3:

“Choose which little box completes the pattern in the big box. The answer letter has been circled for you.

(Holding up the booklet and pointing to the circled answer)

“The answer is A because the same shape is in each little box along a row.

Example 4:

“Choose which little box completes the pattern in the big box. The answer letter has been circled for you.”

(Holding up the booklet and pointing to the circled answer)

“The answer is D because the stars get smaller as you move across the big box.”

6. Check for understanding
7. If children reasonably confident they are to try practice test on Pg. 3.

Instructions

- Circle chosen answer
- Wait for me to provide answer
- Do not turn over

8. The correct answers are:

P1 is B; P2 is D; P3 is C; P4 is B; P5 is B; P6 is A.

Explanations:

In P1, all the shapes in the big oval are black.

In P2, all the shapes in the big oval are little ovals with two crosses in them

In P3, the six-pointed star gets bigger as it moves to the right

In P4, the two patterns follow each other in turn as you look along the boxes

In P5, the three shapes change colour as they move to the right

In P6, the small box on the right has two copies of the shapes in it, one above the other.

9. Check for understanding. Explain in more detail if required.

10. Instructions for test (puzzle solving).

- Do not turn to page four until you are told to do so
- You may not be able to finish all the questions, but try to do as many as you can. If you cannot do any question, do not waste time on it but go on to the next.
- If you wish to change an answer, put in the change clearly. You will not lose marks for crossing out.
- There is one mark for each question that is answered correctly.
- Work as quickly and as carefully as you can
- You will have 25 minutes to do the puzzles
- If you finish before the 25 minutes is up, go back and check through your answers.
- If you have finished and checked your answers put your hand up and sit quietly until a teacher comes and takes your book and pencil.
- Now turn to page four and begin.

11. Students begin test, researcher walk around classroom and check children indicating answers correctly – help if necessary.

12. After 15 minutes notify children they have 10 minutes left – mark time off board

13. After 20 minutes notify children they have 5 minutes left – mark time off board

14. At time – ask children to stop and put down their pencils.

15. Collect books and pencils

Thank children for their participation

Appendix G

Moral Judgement Test - Guideline

Materials required:

Timer - Watch
 Test sheets x 30
 Pencils x 30

Classroom Set-up

Put information/examples on board

Name eg: Fred W.
 School eg: OLM
 Class eg: 5FA
 Date of birth eg: 7.10.91
 Today's date

Start time eg: 11.30
 Increments of time eg: 11.50
 Increments of time eg: 11.55
 Finishing time eg: 12.00

Likert scale on board
 s.disagree to s.agree
 -4 to +4

Separate desks

Instructions:

1. Introduce the test and myself.
 "Lucky you, I have another break from work for you – I have two dilemmas – something that has happened and they could be right or they could be wrong, it depends on what you think.
2. I will read the dilemmas to you, then I will give you a sheet and a pencil. I need you to listen to all of the instructions before we start.
 The first instruction is do not turn the paper over
 Hand out papers and pencils
3. Second, we need to complete pupil information on front cover, refer to board for examples and complete as a group
 - Name
 - School
 - Class
 - Date of birth

- Today's date

4. Third, the times here on the board are the start and finish time, and the time in between before you finish. I will call out how much time you have left and I will mark it off the board.

5. Check ALL children have completed information.

There are no practice questions, because the answers are your opinion – what YOU think, how you would feel. As I read to you I would like you to think about the dilemma and if you agree or disagree with it – keep your thoughts to yourself.

6. Listen as I read, turn to page 2.

Read the Dilemmas

Instructions for completing answers

We will work through the answers together. I will read the question and pretend that I am for or against the action taken.

I will give you a reason WHY I think the action was good or bad.

You have to decide if my reason is a good reason for agreeing or disagreeing with the action taken.

This is how you will mark your answer.

The first question you are asked is if you agree or disagree with the action taken.

Looking at the board, this is an example of how you will record your opinions. You have a choice to strongly disagree (-4) moving along to not really having an opinion (0) to strongly agree (+4).

To mark your answer, you will put a circle around the number which shows your opinion. For example, let's say you strongly agree, we would put a circle around the number +3. If you strongly disagree you would put a circle around -3. If you're not too sure, or you don't think that it was that bad or that good, you would put a circle around 1, 2 or 0.

Questions 2 to 7 give you some reasons why the action taken was right. You have to say if you agree or disagree or have no opinion with these reasons.

Questions 8 to 13 give you some reasons why the action taken was wrong. You have to say if you agree or disagree or have no opinion with these reasons.

7. Check for understanding. Explain in more detail if required.

Instructions for the dilemmas.

Do not turn the page until you are told to do so

You may not be able to finish all the questions, but try to do as many as you can. If you cannot do any question, do not waste time on it but go on to the next. If you wish to change an answer, put in the change clearly. You will not lose marks for crossing out.

Work as quickly and as carefully as you can

You will have 40 minutes to answer the dilemmas – which we will do together and any time over you can use to complete checking

If you finish before the 40 minutes is up, go back and check through your answers.

If you have finished and checked your answers put your hand up and sit quietly until a teacher comes and takes your paper and pencil.

After 15 minutes notify children they have 10 minutes left – mark time off board – if group work completed

After 20 minutes notify children they have 5 minutes left – mark time off board – if group work completed

At time – ask children to stop and put down their pencils.

Collect books and pencils

THANK CHILDREN FOR THEIR PARTICIPATION

Appendix H

I Student's Dilemma

Recently, teachers have been very angry with some students. The students think that it's because the teachers have listening devices planted in the classroom. Teachers listen to what the children are saying when the teacher is out of the classroom and then pick on them because of what they have heard. The teachers say that it is not true. The parents say that there is no proof, and they would only do something if there was proof. Two students then break into the staff room and take tape recordings that prove that the teachers have been listening to the children.

	I strongly Disagree					I strongly agree		
1. Would you agree or disagree with the two student's behaviour?	-3	-2	-1	0	+1	+2	+3	
<hr/>								
What do you think of the following reasons?	I find the reason...							
	Completely Unacceptable				Completely acceptable			
Imagine if someone said the two students were <i>right</i> ...								
2. because they didn't cause much damage to the staffroom	-4	-3	-2	-1	0	+1	+2	+3 +4
3. because the teachers were acting dishonestly, it was OK for the students to break in to make everything alright again	-4	-3	-2	-1	0	+1	+2	+3 +4
4. because most of the students would agree with what the two students did, and most of the students would be happy about it....	-4	-3	-2	-1	0	+1	+2	+3 +4
5. because trusting each other and feeling good about yourself are more important than the teachers needing to know what the children are saying.....	-4	-3	-2	-1	0	+1	+2	+3 +4
6. because the teachers did it first, it was OK for the two students to break into the staffroom.....	-4	-3	-2	-1	0	+1	+2	+3 +4
7. because the two students couldn't think of any legal way to prove the teachers were spying on them, they did what they thought was the only available choice	-4	-3	-2	-1	0	+1	+2	+3 +4

What do you think of the following reasons?	I find the reason...									
	Completely Unacceptable					Completely acceptable				
Imagine if someone said the two students were <i>wrong</i>...										
8. because if everyone acted like the two students did, then the rules and laws of our society would be in danger of not working	-4	-3	-2	-1	0	+1	+2	+3	+4	
9. because people must not take the law into their own hands, or steal things, unless it is for a really important reason.....	-4	-3	-2	-1	0	+1	+2	+3	+4	
10. because risking suspension from school, just because of what the teachers did is not wise	-4	-3	-2	-1	0	+1	+2	+3	+4	
11. because the two students should have asked for help from their parents or other people and not broken the law	-4	-3	-2	-1	0	+1	+2	+3	+4	
12. because people shouldn't steal or commit burglary if they want other people to think they are a good and honest person	-4	-3	-2	-1	0	+1	+2	+3	+4	
13. because the teachers did not pick on the two students, but picked on other children, it had nothing to do with the two students so they had no reason to steal the tape recordings.	-4	-3	-2	-1	0	+1	+2	+3	+4	

Appendix I

II Doctor's Dilemma

A person was very sick and in a lot of pain and was going to die soon. The person asked the doctor to give an injection that would end the person's life which would also get rid of the pain when they died. The doctor agreed to give the injection.

	I strongly Disagree					I strongly agree		
14. Would you agree or disagree with the doctor's behaviour?	-3	-2	-1	0	+1	+2	+3	
<hr/>								
What do you think of the following reasons?	I find the reason...							
	Completely Unacceptable					Completely acceptable		
Imagine if someone said the doctor was <i>right</i>...								
15. because the doctor had to do what he felt was right. The person was so sick it was OK to help them die.....	-4	-3	-2	-1	0	+1	+2	+3 +4
16. because the doctor was the only person who could grant the person's wish. He respected their wish, which is why he did it.....	-4	-3	-2	-1	0	+1	+2	+3 +4
17. because the doctor only did what the person talked him into doing, he didn't need to worry about getting into trouble.....	-4	-3	-2	-1	0	+1	+2	+3 +4
18. because the person would have died anyway and it didn't take much effort to give the injection	-4	-3	-2	-1	0	+1	+2	+3 +4
19. because the doctor didn't really break a law. Nobody could have saved the person and he only wanted to shorten their suffering.....	-4	-3	-2	-1	0	+1	+2	+3 +4
20. because most other doctors would have done the same thing in the same situation...	-4	-3	-2	-1	0	+1	+2	+3 +4

What do you think of the following reasons?	I find the reason...								
	Completely <i>Unacceptable</i>					Completely acceptable			
Imagine if someone said the doctor was <i>wrong</i>...									
21. because the doctor went against what doctors believe in. If doctors are against killing people, even if they want it, then doctors shouldn't do it	-4	-3	-2	-1	0	+1	+2	+3	+4
22. because people should be able to trust that doctors will always want to save lives, not end them, even if someone in pain wants to die.....	-4	-3	-2	-1	0	+1	+2	+3	+4
23. because everyone should protect life. It is difficult to tell the difference between killing someone to help them and murder.....	-4	-3	-2	-1	0	+1	+2	+3	+4
24. because the doctor could get himself into much trouble. Other doctors have already been punished for doing the same thing.....	-4	-3	-2	-1	0	+1	+2	+3	+4
25. because it would have been easier for him if he had waited and not interfered with the person's dying	-4	-3	-2	-1	0	+1	+2	+3	+4
26. because the doctor broke the law. If he thinks that killing people to help them is illegal, then he should not agree to do it.....	-4	-3	-2	-1	0	+1	+2	+3	+4

Thank you!

